Ulysses Measurements of Proton Anisotropies in the Solar Wind

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The Ulysses spacecraft during the period from September of 1994 to September of 1995 traveled from high Southern heliospheric latitudes to high Northern latitudes passing through perihelion at about 1.4 AU. For this period during the Mission, the spacecraft is relatively close to the Sun and free from anomalies such as nutation. The Ulysses SWOOPS plasma experiment has better velocity space resolution in the direction determined by energy measurements; the angular windows in velocity space are wider. Using this period of relatively low magnetosonic Mach number, and applying corrections for the instrumental contributions to measured temperatures in the angular directions, we determine the general, large-scale, properties of the thermal anisotropy in different types of solar wind flow, and search for evidence of radial/latitudinal variations in the anisotropies. We also present comparisons with theoretical estimates of the maximum in the Tperpendicular to Tparallel ratio based on kinetic theory.

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